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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,669	11/20/2001	Tetsuya Kojima	Q66491	9037

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EXAMINER

FEGGINS, KRISTAL J

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,669

Applicant(s)

KOJIMA ET AL.

Examiner

K. Feggins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: The terms "superordination" and "subordination" are not defined in the specification.

Appropriate correction is required.

### *Claim Objections*

2. Claims 1-2, 4-6 & 8 are objected to because of the following informalities: Claims 1-2, 4-6 & 8 contain the words "superordination" and "subordination". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1- 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Inui et al. (U.S. 5,363,125).

**Inui et al. disclose the following claimed limitations:**

\* Regarding claim 1; an image recording/thermal printer/ method (Title) of recording a single pixel forming an image using a plurality of pulses (Abstract)

\* **the step of expressing gradation/desirable tonal/ using a single pulse or a plurality of pulses expressing a "superordination" bit having a larger pulse width and a single pulse or a plurality of pulses/a number of pulses/ expressing a**

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**“subordination” bit having a smaller pulse width (Abstract, col. 3, lines 13-24, col. 6, lines 11-14, 20-25, fig 2)**

\* Regarding claims 2 & 6; the step of and an image recording apparatus: said plurality of pulses/number of pulses/ expressing said “superordination” bit having said larger pulse width lying at irregular intervals/thermal elements driven by intermittent current pulses/ applied to said single pixel (col. 3, lines 24-27, col. 7, lines 10-15, 23-26, figs 2 & 6)

(A number of pulses are used to form 1 pixel. The pulses consist of a long pulse and several short pulses; the pulses relates to the 8-bit image data. The width of these pulses is controlled according to the position of the corresponding pixel and the corresponding sub-line position in the pixel. In other words the heat energy accumulated in the recording head thermal elements is taken into consideration when determining the width of the drive pulses.)

\* Regarding claim 3; the step of: having activation or non-activation operation/strobe signal generator controls the on-off signals of the pulses, each pulse pertains to a certain bit image data/ for each of said pulses, related to a specified bit forming image data (col. 3, lines 13-22, col. 6, lines 11-30, figs 1-2).

\* Regarding claim 4; **the steps of: expressing gradation/desirable tonal/ using a single pulse** or a plurality of pulses **having a larger pulse width expressing**

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**a “superordination” bit and a single pulse or a plurality of pulses/number of pulses/ having a smaller pulse width expressing a “subordination” bit (Abstract, col. 3, lines 13-24, col. 6, lines 11-14, 20-25, fig 2)**

\* having activation or non-activation operation/ strobe signal generator controls the on-off signals of the pulses, each pulse pertains to a certain bit of image data/ for each of said pulses, related to a specified bit forming image data (col. 3, lines 13-22, col. 6, lines 11-30, figs 1-2).

\* Regarding claim 5; an image recording apparatus/thermal printer/

\* an image recording unit/thermal printer/ which records an image in a first direction/main scan direction/;

\* a transfer unit which relatively transfers said image recording unit and a recording medium in a second direction/sub scan direction/ normal to said first direction (col. 3, lines 13-15, 32-35, figs 1-2);

**\* a record control unit/system controller (21 of fig 1)/ which controls and records a single pixel using a plurality of pulses/8-bit image data/ when said image are/is recorded, said record control unit/system controller (21)/ expressing gradation for said image to be recorded using a single pulse or a plurality of pulses having a larger pulse width expressing a “superordination” bit and a single pulse or a plurality of pulses having a smaller pulse width expressing a “subordination” bit (Abstract, col. 2, lines 60-68, col. 3, lines 5-24, col. 6, lines 11-14, 20-25, figs 1-2).**

(The system controller controls the memory controller and the half-tone controller. The memory controller controls the frame memory which writes the image data by frames and is sent to the half tone controller to perform gradation correction of the image data and the corrected image data is sent to the recording head)

\* Regarding claim 7; said record control unit having activation or non-activation operation/strobe signal generator controls the on-off signals of the pulses, each pulse pertains to a certain bit of image data/ for each of said pulses, related to a specified bit forming image data (col. 3, lines 13-22, col. 6, lines 11-30, figs 1-2).

\* Regarding claim 8; said record control unit expressing gradation for said image to be recorded using a single pulse or a plurality of pulses having a larger pulse width expressing a superordination bit and a single pulse or a plurality of pulses having a smaller pulse width expressing a subordination bit, and having activation or non-activation operation/strobe signal generator controls the on-off signals of the pulses, each pulse pertains to a certain bit image data/ for each of said pulses, related to a specified bit forming image data. (col. 3, lines 13-22, col. 6, lines 11-30, figs 1-2).

\* Regarding claims 9-11, **said image recording unit/thermal printer/ (Title and Abstract) being provided a thermal head/recording head with thermal elements/ (col. 3, lines 13-15, fig 2, item 19 & 19A- M).**

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**Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kokubo (U.S. 5,587,732) discloses a thermosensitive color recording paper with a thermal head that are driven by a pulse train constituted of a bias pulse and gradation pulses.

**Communication With The USPTO**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 703-306-4548. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Fuller can be reached on 703-308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KF 2/11

February 5, 2003